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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/759,955 | 01/16/2004 | Manabu Harada | 03791/LH | 8179 |
| 1933 | 7590 | 10/19/2005 | EXAMINER | |
| FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 5TH AVE FL 16 NEW YORK, NY 10001-7708 | | | PHILOGENE, HAISSA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2828 | |

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/759,955

Applicant(s)

HARADA, MANABU

Examiner

Haissa Philogene

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 14-19 is/are allowed.
- 6) ☒ Claim(s) 11-13 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Objections***

Claims 2, 3, 11 and 12 are objected to because of the following informalities: In claims 2 and 3, line 2, respectively, change "electrade" to --electrode-- . In claims 11 and 12, lines 6 and 5, respectively, change "the" before "dielectric" to --a-- . In claim 11, line 5, change "the" before "sectional thickness" to --a-- . In claim 12, enter the missing equation 4: $26 \times 10^6 [V / m] \geq V/L_2$. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-13 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 11 and 12, the value " $26 \times 10^6 [V / m]$ " as recited is not clear. Applicant needs to say what this value represents. It appears that it is the maximum value of the electric field at the end surface of the electrode (as recited in claim 1). Applicant is required to clarify this matter.

Claims 13 and 20 are rejected by virtue of their dependencies on the independent claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa et al., Patent No. 4,626,876.

As per claim 12, Miyagawa discloses in Figs.4-9 a plasma generator which is provided with a plasma forming space, into which the air is introduced (see Col.5, lines 57-59 and Col.6, lines 50-52), and has, in the plasma forming space, an electrode arrangement structure that band plate-like first and second electrodes (2, 3) are arranged in spaced relation from each other are formed on a surface of [the] a dielectric (1), a surface of at least either one of the first and second electrodes being coated with a dielectric film (see Col.4, lines 7-9), an ac high voltage V of 4 to 5 KVRms applied between the first and second electrodes, a length L of 3 mm being a separate distance between the first and second electrodes.

As per claim 11, Miyagawa discloses in Fig.8 a plasma generator which is provided with a plasma forming space, into which the air is introduced, and has, in the plasma forming space, an electrode arrangement structure that band plate-like first and second electrodes (2, 3) are arranged in spaced relation from each other in the same plane in the sectional thickness (120 μm) of [the] a dielectric (1), an ac high voltage V of 4 to 5 KVRms applied between the first and second electrodes, a length L of 3 mm being a separate distance between the first and second electrodes. Note that the electrodes each have an end surface (as shown in Figs. 8 and 16A). The recited value " 26×10^6

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[V / m]" is inherent as a value of the electric field at the end surface of the electrode based at least on the electric field in the air in the vicinity of the electrode and the electric field of the dielectric. Thus, $V/L_2 = 4\text{-}5 \text{ KVRms}/3 \text{ mm}$ which is less than $26 \times 10^6 \text{ [V / m]}$.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa et al.

Miyagawa discloses the claimed invention substantially as explained above except for the voltage applied between the first and second electrodes being 2.5 to 3.5 KV instead of 4 to 5 KVRms. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ 2.5 to 3.5 KV as an ac high voltage for generating plasma along the surface of the dielectric by discharge between the electrodes, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Allowable Subject Matter

Claims 1-10, 14-19 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kuzumoto et al., Patent No. 5,759,497; Sato et al., Patent No. 6,199,505; Denes et al., Patent No. 6,764,658; Gosain et al., Patent No. 5,637,180; Tacchi, Patent No. 5,004,587.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haissa Philogene whose telephone number is (571) 272-1827. The examiner can normally be reached on 8:30 A.M.-6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hp

 Haissa Philogene
Primary Examiner
A.U. 2821V